# Complete Summary

## GUIDELINE TITLE

Thyroid disease in pregnancy.

## BIBLIOGRAPHIC SOURCE(S)

American College of Obstetricians and Gynecologists (ACOG). Thyroid disease in pregnancy. Washington (DC): American College of Obstetricians and Gynecologists (ACOG); 2002 Aug. 10 p. (ACOG practice bulletin; no. 37). [51 references]

## COMPLETE SUMMARY CONTENT



## SCOPE

### DISEASE/CONDITION(S)

Thyroid diseases in pregnancy:

- Hyperthyroidism
- Hypothyroidism
- Thyroid storm
- Thyroid nodule or thyroid cancer
- Postpartum thyroiditis

### GUIDELINE CATEGORY

Diagnosis
Evaluation
Risk Assessment
Treatment

### CLINICAL SPECIALTY

Endocrinology
Obstetrics and Gynecology

## INTENDED USERS

Physicians

## GUIDELINE OBJECTIVE(S)

- To aid practitioners in making decisions about appropriate obstetric and gynecologic care
- To review the thyroid-related pathophysiologic changes created by pregnancy and the maternal-fetal impact of thyroid disease

## TARGET POPULATION

Pregnant women with thyroid disease

## INTERVENTIONS AND PRACTICES CONSIDERED

### Diagnosis

1. Evaluation of signs and symptoms
2. Assessment of thyroid-stimulating hormone (TSH), free thyroxine (FT4) or free thyroxine index (FTI), total thyroxine (TT4), resin triiodothyronine (T3) uptake (RT3U), and total T3 (TT3)

   Note: 1) Performance of thyroid function tests (TFTs) in asymptomatic pregnant women with mildly enlarged thyroid is not warranted; 2) Measurement of free triiodothyronine (FT3) is only recommended in patients with thyrotoxicosis with suppressed TSH but normal FT4 measurements.

3. Thyrotropin-releasing hormone (TRH) stimulation test

   Note: Routine evaluation of maternal thyroid-stimulating immunoglobulin (TSI) is not recommended but may be helpful in some circumstances.

4. Measurement of antimicrosomal or thyroperoxidase antithyroid peroxidase antibodies

### Treatment/Management

1. Hyperthyroidism
   - Thioamides such as propylthiouracil (PTU) and methimazole
   - Beta-blockers such as propranolol
   - Thyroidectomy (for women who fail thioamide treatment only)
   - Monitoring maternal and neonatal thyroid function
2. Hypothyroidism
   - Levothyroxine
   - Monitoring maternal thyroid-stimulating hormone (TSH) levels every trimester
3. Thyroid storm

- Propylthiouracil orally or methimazole rectal suppositories
- Saturated solution of potassium iodide (SSKI), or sodium iodide, or Lugol's solution, or lithium carbonate
- Dexamethasone
- Propranolol (for patients with a history of severe bronchospasm: reserpine, guanethidine, or diltiazem)
- Phenobarbital
- General supportive measures including oxygen administration, maintenance of intravascular volume and electrolytes, use of antipyretics, use of cooling blanket, and appropriate maternal and fetal monitoring
- Treatment of perceived underlying cause of the storm
- Evaluation of fetal well-being with ultrasonography, biophysical profile, or nonstress test

For further information on treatment of thyroid storm, including dosing and routes of administration, refer to the original guideline document.

4. Thyroid nodule, thyroid cancer
    - Diagnostic evaluation of thyroid nodule
    - Multidisciplinary treatment plan including the following options: pregnancy termination, treatment during pregnancy, or preterm or term delivery with treatment after pregnancy
    - Thyroidectomy
    - Radiation (after pregnancy)
5. Postpartum thyroiditis
    - Thyroxine (T4)

Note: The need for treatment in women with postpartum thyroiditis is not clear.

### MAJOR OUTCOMES CONSIDERED

- Physiologic changes in thyroid function during pregnancy
- Maternal-fetal impact of thyroid disease
- Effect of hyperemesis gravidarum and thyroid function
- Utility of thyroid function tests in diagnosing thyroid disease during pregnancy
- Effect of drug treatment for thyroid disease during pregnancy on maternal and fetal thyroid function

## METHODOLOGY

### METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

### DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The MEDLINE database, the Cochrane Library, and the American College of Obstetricians and Gynecologists' (ACOG's) own internal resources and documents

were used to conduct a literature search to locate relevant articles published between January 1985 and August 2000. The search was restricted to articles published in the English language. Priority was given to articles reporting results of original research, although review articles and commentaries also were consulted. Abstracts of research presented at symposia and scientific conferences were not considered adequate for inclusion in this document.

Guidelines published by organizations or institutions such as the National Institutes of Health and the American College of Obstetricians and Gynecologists were reviewed, and additional studies were located by reviewing bibliographies of identified articles.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Studies were reviewed and evaluated for quality according to the method outlined by the U.S. Preventive Services Task Force.

I Evidence obtained from at least one properly designed randomized controlled trial

II-1 Evidence obtained from well-designed controlled trials without randomization

II-2 Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group

II-3 Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence.

III Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

### DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Analysis of available evidence was given priority in formulating recommendations. When reliable research was not available, expert opinions from obstetrician-gynecologists were used. See also the "Rating Scheme for the Strength of Recommendations" field regarding Grade C recommendations.

### RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Based on the highest level of evidence found in the data, recommendations are provided and graded according to the following categories:

Level A - Recommendations are based on good and consistent scientific evidence.

Level B - Recommendations are based on limited or inconsistent scientific evidence.

Level C - Recommendations are based primarily on consensus and expert opinion.

### COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

### METHOD OF GUIDELINE VALIDATION

Internal Peer Review

### DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Practice Bulletins are validated by two internal clinical review panels composed of practicing obstetrician-gynecologists generalists and sub-specialists. The final guidelines are also reviewed and approved by the American College of Obstetricians and Gynecologists (ACOG) Executive Board.

## RECOMMENDATIONS

### MAJOR RECOMMENDATIONS

The grades of evidence (I-III) and levels of recommendations (A-C) are defined at the end of the "Major Recommendations."

The following recommendation is based on good and consistent scientific evidence (Level A):

Levels of thyroid-stimulating hormone (TSH) or free thyroxine (FT4)/free thyroxine index (FTI) should be monitored to manage thyroid disease in pregnancy.

The following recommendations are based on limited or inconsistent scientific evidence (Level B):

- Either propylthiouracil (PTU) or methimazole can be used to treat pregnant women with hyperthyroidism.
- Thyroid function tests (TFTs) are not indicated in asymptomatic pregnant women with slightly enlarged thyroid glands.

The following recommendations are based primarily on consensus and expert opinion (Level C):

- There is no need to measure thyroid function tests routinely in women with hyperemesis.
- There are insufficient data to warrant routine screening of asymptomatic pregnant women for hypothyroidism.
- Indicated testing of thyroid function may be performed in women with a personal history of thyroid disease or symptoms of thyroid disease.
- The presence of maternal thyroid disease is important information for the pediatrician to have at the time of delivery.
- Thyroid nodules should be investigated to rule out malignancy.

Definitions:

Grades of Evidence

I Evidence obtained from at least one properly designed randomized controlled trial

II-1 Evidence obtained from well-designed controlled trials without randomization

II-2 Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group

II-3 Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence.

III Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees

Levels of Recommendations

Level A - Recommendations are based on good and consistent scientific evidence.

Level B - Recommendations are based on limited or inconsistent scientific evidence.

Level C - Recommendations are based primarily on consensus and expert opinion.

### CLINICAL ALGORITHM(S)

None provided

## EVIDENCE SUPPORTING THE RECOMMENDATIONS

### TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

## BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

### POTENTIAL BENEFITS

Appropriate diagnosis and treatment of thyroid disease in pregnancy

### POTENTIAL HARMS

Side Effects of Thioamides

Thioamide treatment is associated with agranulocytosis, thrombocytopenia, hepatitis, vasculitis, rash, nausea, arthritis, anorexia, fever, and loss of taste or smell. In addition, transient suppression of fetal and neonatal thyroid function and fetal goiter have been reported.

## CONTRAINDICATIONS

### CONTRAINDICATIONS

Iodine 131 is contraindicated in pregnant women because of the risk of fetal thyroid ablation.

## QUALIFYING STATEMENTS

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- These guidelines should not be construed as dictating an exclusive course of treatment or procedure. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations unique to the institution or type of practice.
- There have been no intervention trials to demonstrate the efficacy of screening and treatment to improve neuropsychologic performance in the offspring of hypothyroid women. The available data are consistent with the possibility that maternal hypothyroidism is associated with a decrement in some neuropsychologic testing. However, the association needs further

testing to document its validity and, if confirmed, evidence that treatment ameliorates the effect. For all of these reasons, it would be premature to recommend universal screening for hypothyroidism during pregnancy.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Getting Better

### IOM DOMAIN

Effectiveness

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

American College of Obstetricians and Gynecologists (ACOG). Thyroid disease in pregnancy. Washington (DC): American College of Obstetricians and Gynecologists (ACOG); 2002 Aug. 10 p. (ACOG practice bulletin; no. 37). [51 references]

### ADAPTATION

Not applicable: The guideline was not adapted from another source.

### DATE RELEASED

2001 (revised 2002 Aug)

### GUIDELINE DEVELOPER(S)

American College of Obstetricians and Gynecologists - Medical Specialty Society

### SOURCE(S) OF FUNDING

American College of Obstetricians and Gynecologists (ACOG)

### GUIDELINE COMMITTEE

American College of Obstetricians and Gynecologists (ACOG) Committee on Practice Bulletins-Obstetrics

## COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

## FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

## GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: American College of Obstetricians and Gynecologists (ACOG). Thyroid disease in pregnancy. Washington (DC): American College of Obstetricians and Gynecologists (ACOG); 2001 Nov.

## GUIDELINE AVAILABILITY

Electronic copies: Not available at this time.

Print copies: Available for purchase from the American College of Obstetricians and Gynecologists (ACOG) Distribution Center, PO Box 4500, Kearneysville, WV 25430-4500; telephone, 800-762-2264, ext. 192; e-mail: sales@acog.org. The ACOG Bookstore is available online at the ACOG Web site.

## AVAILABILITY OF COMPANION DOCUMENTS

None available

## PATIENT RESOURCES

None available

## NGC STATUS

This summary was completed by ECRI on February 4, 2004. The information was verified by the guideline developer on July 26, 2004.

## COPYRIGHT STATEMENT

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